

From: [Lancey, Susan](#)
To: [Tarbuck, Kathy](#); [Higgins, Lisa](#)
Cc: [Gilbert, Jane](#); [Rice, Jonathan E](#); [McDonnell, Ida](#); [Bird, Patrick](#)
Subject: RE: biomass gasifier units such as chiptec
Date: Thursday, December 17, 2015 9:51:29 AM

Hi all,

I checked with HQ. If the gasifier is directly coupled to the boiler then we have generally treated them as one unit, and as a biomass fired unit. Lisa, you are correct that we did consider these gasifier systems in our analysis for subpart 6J.

The way we understand these units, they are a two-stage combustion of a solid biomass. The first stage (gasifier) generates the gas, with the second stage combusting the gas, in effect completing the combustion process started in the first stage. There is no cleanup of the gas between the stages. Thus, the inorganic (metals, Cl) in the solid biomass are likely in the gas.

I did not find any determinations in our applicability determination index on this. If a facility does not agree and wants a formal determination, they could send a letter to Region I.

Let me know if you have any questions. Thanks again Lisa for sending the rule info about these units and asking me to look into this further.

Susan Lancey
U.S. EPA Region I
5 Post Office Square
Suite 100 (OEP05-2)
Boston, MA 02109
617-918-1656

From: Tarbuck, Kathy [mailto:Kathy.Tarbuck@maine.gov]
Sent: Tuesday, December 15, 2015 4:04 PM
To: Lancey, Susan <lancey.susan@epa.gov>; Higgins, Lisa <Lisa.Higgins@maine.gov>
Cc: Gilbert, Jane <Jane.Gilbert@maine.gov>; Rice, Jonathan E <Jonathan.E.Rice@maine.gov>
Subject: RE: biomass gasifier units such as chiptec

Hi Susan –

I found this description in the initial application.

Chiptec biomass gasification boiler:

The Chiptec gasifier is close coupled to a boiler. The gasifier is capable of using biomass fuel that has a moisture content of 6% to 55% wet basis. The system can operate on a variety of wood fuel including green hardwood chips, wood pellets, dry hardwood hogged fuel, and dry sawdust and shavings. Woody biomass enters a hot refractory lined chamber where it is heated to the point where the volatile pyrolysis gas is released into an oxygen-deprived environment. The gases then travel through the burner nozzle where they are superheated and mixed with air for nearly complete combustion, leaving little or no waste. The average flame temperature in the furnace of the boiler is 2100F to 2300F.

I hope this is helpful.

Kathy
Kathy Tarbuck
Licensing, Bureau of Air Quality
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333
ph (207) 287-9931
kathy.tarbuck@maine.gov

From: Lancey, Susan [mailto:lancey.susan@epa.gov]
Sent: Monday, December 14, 2015 1:16 PM

To: Higgins, Lisa
Cc: Tarbuck, Kathy; Gilbert, Jane; Rice, Jonathan E
Subject: RE: biomass gasifier units such as chiptec

Hi Lisa,

Thanks for questioning my answer. I can check with HQ. We issued this applicability determination for a waste gasifier creating a syn gas which is piped to a boiler and determined the boiler is not subject because it is burning syn gas and is considered gas-fired. <http://cfpub.epa.gov/adi/pdf/adi-mact-m140002.pdf> Combustion was not occurring in this gasification process.

Do you have a description of the unit? Does combustion occur when the wood chips are gasified? If you can send me a written description, I will forward it on to EPA HQ. Thanks!

Susan Lancey
U.S. EPA Region I
5 Post Office Square
Suite 100 (OEP05-2)
Boston, MA 02109
617-918-1656

From: Higgins, Lisa [<mailto:Lisa.Higgins@maine.gov>]

Sent: Monday, December 14, 2015 12:51 PM

To: Lancey, Susan <lancey.susan@epa.gov>

Cc: Tarbuck, Kathy <Kathy.Tarbuck@maine.gov>; Gilbert, Jane <Jane.Gilbert@maine.gov>; Rice, Jonathan E <Jonathan.E.Rice@maine.gov>

Subject: biomass gasifier units such as chiptec

Hi Susan

I was surprised at the new interpretation that biomass gasifiers are not subject to the area source boiler MACT. I remember reviewing the data for the area source boiler NESHAP and at least two chiptec (wood gasifier) units were included in the original data base for development of the area source boiler rule. BTW, we have licensed many biomass gasifier units and we had determined they were subject to Subpart 6J. Is the rule writer for the area source boiler NESHAP still around? They may have a handle on what units were used to develop the reg. We have at least three licenses in the works that have biomass gasifier units and I want to make sure that we do this correctly and consistently.

Here is a quick search on the area source docket for "gasifier"

<http://www.regulations.gov/#!docketBrowser;rpp=25;po=0;s=gasifier;dct=SR%252BO;D=EPA-HQ-OAR-2006-0790>

Lisa P. Higgins, PE
Environmental Engineer
State of Maine - DEP
Bureau of Air Quality
Air Emissions Licensing
(207)-287-7023